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Role of Higher Education in Skill Development and Employability for Sustainable Economic Growth in India

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Abstract:

Higher education plays a significant role in promoting skill development and employability, which are essential for achieving sustainable economic growth. This study examines the relationship between higher education, skill development, and employability in India within the broader framework of sustainable development. The study is descriptive in nature and is based on secondary data collected from various sources such as the All-India Survey on Higher Education (AISHE), India Employment Report, India Skills Report, and government policy documents.

The findings indicate that although higher education has expanded rapidly in India, a significant gap still exists between academic qualifications and labour market requirements. This mismatch has contributed to rising graduate unemployment and underemployment. The study highlights key challenges such as outdated curricula, lack of industry alignment, and insufficient practical and soft skills among graduates.

The paper also examines major government initiatives including the National Education Policy (NEP) 2020, Skill India Mission, and Pradhan Mantri Kaushal Vikas Yojana (PMKVY), which aim to promote vocational education, industry-oriented training, and skill-based learning. Furthermore, it emphasizes the role of higher education institutions in curriculum reform, industry–academia collaboration, experiential learning, and entrepreneurship development. Strengthening these aspects can enhance graduate employability and contribute to sustainable economic growth and workforce development in India.

Keywords: Higher Education; Skill Development; Employability; Sustainable Economic Growth; India

Introduction:

Sustainable development has become an important global framework for addressing economic, social, and environmental challenges. The concept gained recognition through the Brundtland Report, "*Our Common Future"* (WCED, 1987), which defined sustainable development as meeting present needs without compromising the ability of future generations to meet their own needs. This concept highlights the balance between economic growth, social equity, and environmental protection.

A major milestone in global sustainability efforts was the adoption of the 2030 Agenda for Sustainable Development by the United Nations in 2015, which introduced 17 Sustainable Development Goals (SDGs). Among them, SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth) emphasize the role of education, skill development, and employment generation in achieving sustainable development. In this context, higher education institutions contribute by generating knowledge, promoting innovation, and developing skilled human resources.

Universities are also recognized as key drivers of economic and social progress. The Talloires Declaration (1990) highlighted the responsibility of universities to promote sustainability through education, research, and community engagement. By integrating academic learning with skill development, higher education can enhance employability and workforce productivity.

In India, this relationship is particularly important due to the country's large youth population. However, despite the expansion of higher education, a gap remains between academic qualifications and labour

market requirements. The India Skills Report indicates that only about 54–56% of graduates are employable, highlighting the mismatch between education and industry needs.

To address this challenge, the Government of India has introduced initiatives such as the Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), and the National Education Policy (NEP) 2020, which emphasize vocational education, skill-based learning, and industry-oriented training. In this context, higher education institutions play a crucial role in promoting skill development, employability, and sustainable economic growth in India.

Conceptual Framework:

- **Higher Education:**
  Higher education refers to education provided by universities, colleges, and other institutions after secondary education. It includes undergraduate, postgraduate, and research programs aimed at developing advanced knowledge and skills. Higher education plays a key role in knowledge creation, human capital development, innovation, and social transformation, contributing significantly to India's knowledge economy (AISHE).
- **Skill Development:**
  Skill development refers to the process of acquiring and improving abilities needed to perform tasks effectively. It includes technical, cognitive, and soft skills such as communication, problem-solving, and teamwork. In the modern economy, skill development is essential for enhancing productivity and competitiveness, especially with the growing adoption of technologies like artificial intelligence, automation, and digitalization.
- **Employability:**
  Employability refers to the ability of individuals to obtain and sustain employment. It involves a combination of knowledge, skills, attitudes, and personal attributes that help graduates meet labour market demands. Research shows that employability depends not only on academic qualifications but also on practical experience, technical competencies, and soft skills.
- **Sustainable Economic Growth:**
  Sustainable economic growth refers to development that meets present needs without compromising the ability of future generations to meet their own needs. It requires balanced progress across economic, social, and environmental dimensions. Education and skill development play a key role in strengthening human capital and supporting sustainable economic growth.

Objectives of the Study:

1. To examine the relationship between skill development in higher education and graduate employability.
2. To analyse the role of skill-oriented higher education in promoting employment and sustainable economic growth.
3. To evaluate the effectiveness of government initiatives in enhancing skill development and employability in India.

Data and Methodology:

The proposed study mainly is descriptive in nature. It solemnly based on secondary data and information which is collected from the concerned sources as per need of the research. The relevant books, documents of various ministries/departments and organizations, articles, papers and web-sites are used in this study.

Literature Review:

Sustainable development emphasizes the integration of economic growth, social equity, and environmental protection. The concept was formally defined by the World Commission on Environment and Development in the Brundtland Report (WCED, 1987), which highlighted the importance of sustainable economic and social progress. Education, particularly higher education, plays a critical role in achieving sustainable development by promoting human capital formation, innovation, and knowledge creation (Tilbury, 2011).

Several studies highlight that higher education institutions contribute significantly to skill development and employability by equipping students with technical knowledge and transferable skills required in modern labour markets (Yorke, 2006). However, research also indicates the existence of a skill gap between higher education outcomes and industry requirements, particularly in developing economies such as India (Blom & Saeki, 2011).

Scholars emphasize that strengthening industry–academia collaboration, integrating vocational training, and promoting experiential learning within universities can significantly improve graduate employability and economic productivity (Borah, Malik, & Massini, 2021). Furthermore, policy initiatives such as the Skill India Mission and National Education Policy 2020 highlight the importance of skill-oriented higher education in promoting employment generation and sustainable economic growth in India (Government of India, 2020).

Status of Higher Education in India:

The Ministry of Education, Government of India releases All India Survey on Higher Education (AISHE) 2021-2022. According to this survey:

- The total number of Universities / University level institutions registered is 1,168, Colleges 45,473 and Standalone Institutions 12,002.
- The total enrolment in higher education has increased to nearly 4.33 crore in 2021-22 from 4.14 crore in 2020-21.
- Female enrolment increased from 2.01 crore in 2020–21 to 2.07 crore in 2021–22.
- GER has increased to 28.4 % in 2021-22 from 23.7% in 2014-15.
- Ph.D. enrolment has increased by 81.2% to 2.12 lakh in 2021-22 compared to 1.17 lakh in 2014-15.

Statistical Analysis of Graduate Unemployment in India:

According to the India Employment Report 2024, published by the International Labour Organization (ILO) and the Institute for Human Development (IHD). The following data points highlight the depth of this crisis:

- **Graduate Unemployment:** Approximately 29.1% of graduates are unemployed, nearly nine times higher than the rate for illiterate individuals (3.4%).
- **Youth Joblessness:** Young graduates under 25 face a staggering unemployment rate of 42.3%.
- **Employability Gap:** Only 51.25% of final-year students and postgraduates are considered employable or "job-ready" according to the India Skills Report 2024.
- **Underemployment:** Nearly 50% of graduates work in "elementary" or "semi-skilled" roles that do not require their level of education.

Primary Causes of Unemployability:

According to the India Employment Report 2024 and Periodic Labour Force Survey (PLFS) 2023–24, conducted by the National Sample Survey Office (NSSO). Following are the primary causes of graduate unemployability in India.

1. **Outdated Curricula:** Many institutions use syllabi that have not been updated for decades, focusing on rote learning and theoretical knowledge over practical industry needs.
2. **Lack of Soft Skills:** Employers frequently cite a deficiency in critical "soft skills" such as communication, problem-solving, and teamwork.
3. **Low Industry Alignment:** Only 8.6% of higher education institutions are fully aligned with industry requirements.
4. **Aspiration Mismatch:** Higher educated youth often "hold out" for secure, high-status "white-collar" jobs, leading to longer periods of voluntary unemployment.
5. **Gender Disparities:** Educated women face much higher unemployment rates (13.3% in urban areas) compared to men (6.2%), often due to socio-cultural constraints and lack of suitable flexible roles.

Government Initiatives for Skill Development in Higher Education:

The Government of India has launched following initiatives to address the skill gap and improve employability in higher education India:

1. National Education Policy (NEP), 2020

- India has one of the largest youth populations in the world, making skill and vocational education crucial for improving employability and economic growth. However, vocational education in India remains limited; less than 5% of youth aged 19–24 receive formal vocational training, compared to 52% in the USA, 75% in Germany, and 96% in South Korea, highlighting a significant skill gap in the Indian workforce.
- This skill gap has created a mismatch between higher education outcomes and labour market needs, contributing to graduate unemployment. To address this, the Government of India introduced the National Education Policy (NEP) 2020, which emphasizes vocational training and skill-based learning.
- A key objective of NEP 2020 is to integrate vocational education into mainstream academic programs, enabling students to gain practical skills alongside theoretical knowledge in schools and higher education institutions.
- A key target of NEP 2020 is to ensure that at least 50% of learners in the school and higher education system receive vocational education exposure by 2025.
- The policy proposes to raise the Gross Enrolment Ratio (GER) in higher education to 50% by 2035, compared to about 26% in recent years, which will significantly expand the number of students receiving higher education and vocational training.
- NEP 2020 also emphasizes stronger industry–academia collaboration to ensure students gain skills aligned with labour market needs.

2. Skill India Mission:

- The Skill India Mission is a flagship initiative of the Government of India launched on 15 July 2015 (World Youth Skills Day) to enhance employability by providing market-relevant skill training to the country's youth. It is implemented by the Ministry of Skill Development and Entrepreneurship (MSDE) and coordinated through institutions such as the National Skill Development Corporation (NSDC).
- The mission was introduced to address the mismatch between education and industry skill requirements and to harness India's demographic dividend by building a skilled workforce.

Major Scheme under Skill India Mission:

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** is a flagship skill development scheme launched in 2015 under the Skill India Mission by the Ministry of Skill Development and Entrepreneurship (MSDE) and implemented through the National Skill Development Corporation (NSDC).
- The scheme aims to provide **industry-relevant skill training** to unemployed youth and school/college dropouts to improve their employment and self-employment opportunities.
- PMKVY offers **short-term training, recognition of prior learning, and certification** based on the National Skill Qualification Framework (NSQF) and National Occupational Standards (NOS).
- Recent versions (**PMKVY 3.0 and 4.0**) increasingly integrate with **universities, colleges, ITIs, and skill hubs** to strengthen skill development within higher education institutions.

Evolution of PMKVY:

1. PMKVY 1.0 (2015–2016)

- Budget: ₹1,500 crore
- Target: 24 lakh youth
- Focus on skill certification and training

Achievement: According to Ministry of Skill Development and Entrepreneurship, PMKVY 1.0 (2015–2016) successfully trained 19.85 lakh youth, out of which about 14.5 lakh were certified, and over 6 lakh workers were certified through Recognition of Prior Learning (RPL).

2. **PMKVY 2.0 (2016–2020)**

- Budget: ₹12,000 crore
- It aimed to train 1 Crore youth across India.

Achievement: PMKVY 2.0 (2016–2020) significantly expanded India's skill development ecosystem by training over 1.10 crore candidates, including around 54 lakh individuals certified under Recognition of Prior Learning (RPL).

3. **PMKVY 3.0 (2021–2022)**

- It aimed to train 8 lakh youth across India.
- Budget of about ₹948.9 crore.

Achievement: During this phase, around 7.37 lakh candidates were trained, of which about 4.33 lakh received certification. The scheme also introduced innovative initiatives such as the Skill Hub Initiative and COVID-19 Crash Course Programme, which trained over 1.2 lakh healthcare workers, thereby contributing to employment generation and workforce development.

4. **PMKVY 4.0 (2023 onwards)**

- This version focuses on making vocational training more flexible, industry-aligned, and technology-driven to boost youth employability **(**Ministry of Skill Development and Entrepreneurship (MSDE)

Key Features:

- **Industry 4.0 Courses**: Includes new-age skills such as **Artificial Intelligence (AI), Robotics, 3D Printing, Drones, IoT,** and **Coding.**
- **On-the-Job Training (OJT)**: Mandatory workplace exposure is now embedded into courses to ensure candidates are "job-ready" with practical experience.
- **Skill India Digital Hub (SIDH)**: All training and certification processes are integrated into the Skill India Digital Hub, which also links candidates to job and apprenticeship opportunities.
- **Flexible Delivery**: Training is provided through diverse channels, including **Skill Hubs** in schools and colleges, ITIs, and Pradhan Mantri Kaushal Kendras (PMKK).
- **Placement Strategy**: Unlike previous versions, PMKVY 4.0 has **formally delinked fixed placement targets** from the training, focusing instead on empowering candidates to choose varied career paths, including entrepreneurship.

Achievement: Under PMKVY 4.0, about 27.08 lakh candidates have been trained across 38 sectors as of December 2025. The scheme emphasizes Industry 4.0 and emerging technologies, with over 5.10 lakh candidates trained in fields such as AI, IoT, Data Science, and Machine Learning, including 3.59 lakh certified candidates. Between April 2024 and December 2025, more than 7.5 lakh candidates were trained in high-growth sectors like IT-ITeS, aerospace, aviation, and tourism.

Phase -wise Targets and Achievements under PMKVY

Phase	Period	Target	Trained
PMKVY 1.0	2015-2016	24 Lakh	19.85 Lakh
PMKVY 2.0	2016-2020	1 Crore	1.10 Crore
PMKVY 3.0	2021-2022	8 Lakh	7.37 Lakh
PMKVY 4.0	2023 Onwards	Ongoing	+ 27 Lakh

Role of Higher Education Institutions in Skill Development:

Higher education institutions play a central role in promoting skill development.

1. **Curriculum Reform:**

Curriculum reform is essential for aligning higher education with labour market requirements. Many university programs traditionally emphasize theoretical knowledge rather than practical skills. (Yorke,

2006). Therefore, universities need to redesign curricula by incorporating skill-based courses, vocational components, and interdisciplinary learning. (OECD, 2019). The National Education Policy (NEP) 2020 also emphasizes competency-based education, internships, and industry-oriented programs to enhance students' practical skills and employability (Ministry of Education, 2020).

2. **Industry Collaboration:**
   Collaboration between higher education institutions and industries helps bridge the gap between academic education and workplace requirements. Industry partnerships facilitate internships, apprenticeships, training programs, and collaborative research, enabling students to gain practical exposure and professional experience. Such collaborations also help universities update curricula according to changing industry needs (OECD, 2019; World Bank, 2019).
3. **Experiential Learning:**
   Experiential learning focuses on acquiring knowledge through practical experience. Activities such as internships, fieldwork, laboratory training, and project-based learning allow students to apply theoretical knowledge in real-world situations. This approach enhances students' problem-solving ability, communication skills, and professional competencies, thereby improving their employability (Kolb, 1984; Yorke, 2006).
4. **Entrepreneurship Development:**
   Higher education institutions can promote entrepreneurship by establishing incubation centres, startup support programs, and innovation hubs. Entrepreneurship education encourages students to develop innovative ideas, leadership skills, and risk-taking abilities. By fostering a culture of entrepreneurship, universities contribute to job creation and economic development (Audretsch, 2014; Ministry of Education, 2020).
5. **Lifelong Learning:**
   In the modern knowledge economy, continuous learning has become essential for adapting to technological and economic changes. Higher education institutions can promote lifelong learning by offering short-term courses, professional training programs, and online learning opportunities. These initiatives help individuals upgrade their skills and remain competitive in the evolving labour market (OECD, 2019; World Bank, 2019; Ministry of Education, 2020).

Higher Education and Sustainable Economic Growth:
Higher education plays a significant role in promoting sustainable economic growth by developing skilled human resources, fostering innovation, encouraging entrepreneurship, and supporting social development.

1. **Human Capital Development:**
   Higher education contributes to sustainable economic growth by developing human capital. Universities equip students with specialized knowledge, technical skills, and professional competencies that improve productivity and economic efficiency. In India, skill-based education and vocational training within higher education help prepare graduates for emerging sectors such as information technology, digital services, and advanced manufacturing (Becker, 1993; World Bank, 2019; Ministry of Education, 2020).
2. **Innovation and Research:**
   Universities and research institutions play a crucial role in promoting innovation and technological advancement. Through research activities, innovation centres, and industry collaborations, they contribute to knowledge creation and the development of new technologies, which enhance industrial productivity and support sustainable economic growth (OECD, 2019; World Bank, 2019).
3. **Entrepreneurship Promotion:**
   Higher education institutions promote entrepreneurship by establishing incubation centres, innovation hubs, and entrepreneurship development programs. These initiatives encourage students to develop innovative ideas, build startups, and create employment opportunities, thereby contributing to economic development and sustainable growth (Audretsch, 2014; Etzkowitz & Leydesdorff, 2000; Ministry of Education, 2020).

4. Social Development:

Higher education also supports social development by improving social mobility, reducing inequality, and enhancing quality of life. Through inclusive education and skill development, it empowers individuals to participate effectively in economic and social activities, contributing to a more equitable and sustainable society (UNESCO, 2015).

Conclusion:

Higher education plays a vital role in promoting skill development and employability, which are essential for achieving sustainable economic growth in India. Despite the significant expansion of higher education, challenges such as skill gaps, graduate unemployment, and the mismatch between academic curricula and industry requirements continue to affect the employability of graduates.

Policy initiatives such as the National Education Policy (NEP) 2020 and the Skill India Mission emphasize skill-based education, vocational training, and stronger collaboration between higher education institutions and industries. Integrating practical training, internships, digital competencies, and entrepreneurship education into academic programs can significantly enhance students' employability and better prepare them for the evolving labour market.

Therefore, strengthening industry–academia partnerships and aligning higher education with labour market needs is crucial for developing a skilled and adaptable workforce. In this context, higher education institutions must act as key drivers of skill formation, innovation, and employability to support India's long-term sustainable economic growth.

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